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 None

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(54) Glazed cabinets such as gaming machine cabinets

(57) A fruit machine cabinet mounts a replaceable glass panel (1) and superimposed light box (2), which are held in place against a lip (8) of cabinet framework members (4) by channel-section locking strips which themselves are resiliently secured by a wedge section strip or a series of resilient plastics wedges (18). A first limb (14) of each locking strip co-operates with the lip (8), and a second limb (15) of greater length than the first limb engages at its projecting free end (16) with the back of the light box (2). Each wedge member is compressed in use between the locking strip and a retaining face (26) on the framework member (4).

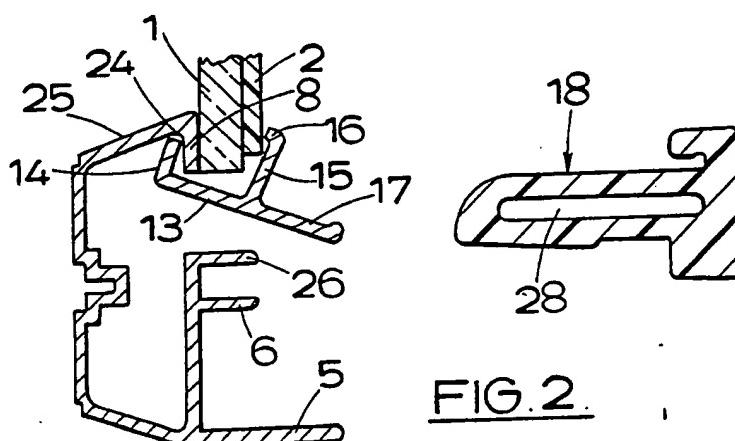


FIG. 2.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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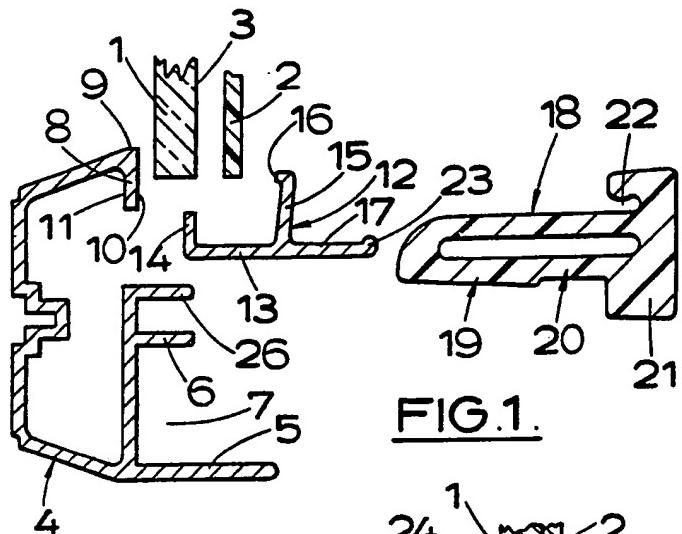


FIG.1.

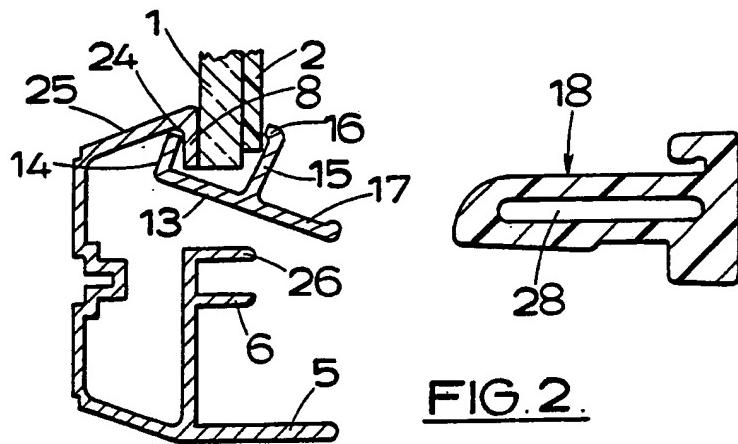


FIG. 2.

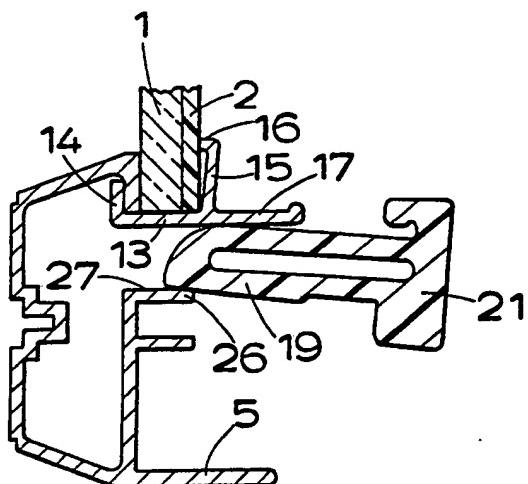


FIG. 3.

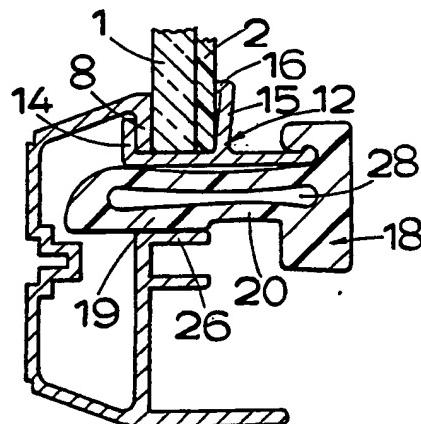


FIG.4.

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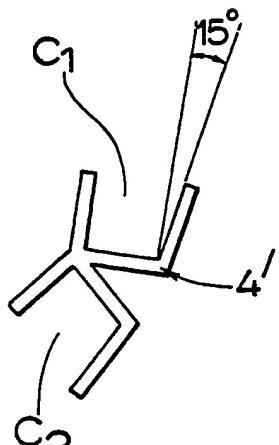


FIG. 6.

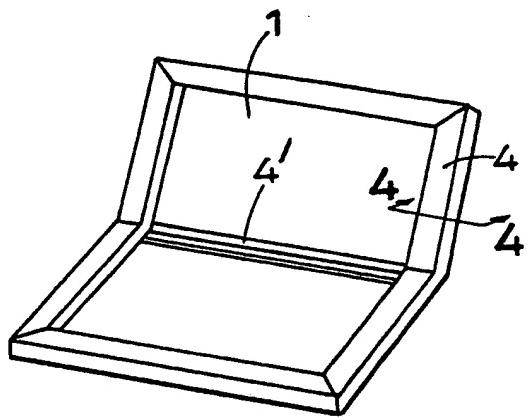


FIG. 5.

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GLAZED CABINETS SUCH AS GAMING MACHINE CABINETS

This invention relates to glazed cabinets particularly, but not exclusively, to glazed cabinets for gaming or amusement machines, such as so-called "fruit machines". The invention is concerned with an arrangement for retaining a glass panel of the cabinet.

Fruit machine cabinets commonly comprise two glass panels, one on the front of the upright upper portion of the cabinet, and one on the sloping top surface of the lower portion of the cabinet, the panels substantially meeting one another in an angle. The glass panels usually carry on their rear surfaces instructions and other information on the machine game together with feature displays and other decorative artwork. Such material is usually silk screened onto the rear surfaces of the glass. Behind the glasses are located respective light boxes or panels which support the various bulbs and other light sources used to illuminate different portions of the glasses.

It has become increasingly common practice to convert an existing fruit machine to provide a different game. This has been facilitated by the fact that many of the machine control features are controlled by programmed chips which can be replaced or sometimes reprogrammed.

The conversion of a machine involves changing the glasses and usually the light boxes as well. It is important that the glasses are secured firmly in place in the cabinet for safety reasons and because sometimes the cabinets are abused.

The present invention is aimed at providing an arrangement for securely retaining a glass panel in place yet allowing the glass panel to be readily replaced when it is desired to replace the glass.

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According to one aspect of the invention a kit of parts to produce a glazed cabinet comprises an aperture defined by a surrounding framework, and a glass panel adapted to bear against the inside the framework, at least one removable retaining strip shaped to retain the margin of the glass panel to the framework, and at least one resilient plug or wedge member adapted to be inserted between a plug-retaining face on the framework and the retaining strip to hold the retaining strip in position.

Although the plug or wedge member could be in the form of a strip to extend substantially along the retaining strip, preferably a plurality of such plug or wedge members are provided which are spaced apart along the retaining strip.

According to a second aspect of the invention a kit of parts to produce a glazed cabinet comprises a cabinet framework bounding a polygonal aperture in which a glass panel is to be retained, at least two fixed lengths of the framework constituting sides of the aperture and each presenting in transverse cross-section a lip which is directed outwardly of the aperture and which provides a glass abutment surface for engagement by the outer surface of the margin of the glass panel, which is of greater overall dimensions than those of the aperture, and a respective locking strip of substantially channel-section adapted to extend along the respective side, the channel-section strip comprising a base from which depend first and

second spaced upstanding limbs, the first limb of each locking strip being adapted to engage in use with the side of the lip which is remote from the glass panel, and the second limb of the locking strip being adapted 5 to engage in use with the marginal flange of a light panel/box or other associated glass-engaging member located against the rear surface of the glass panel (or possibly against the rear face of the glass panel itself in some cases), the said lengths of framework being shaped in transverse cross-section to define a 10 plug-retaining face which in use substantially confronts but is spaced from the respective edge of the glass panel and associated member, and a plurality of plug or wedge members for retaining each locking strip, the plug members being adapted to be inserted into 15 position from the inside of the cabinet, when the respective locking strip has been loosely assembled to the lip and glass panel, such that the plug members are wedged between the base of the respective locking strip and the plug-retaining face of the respective framework 20 length, to retain the locking strip in a fully assembled position, the longitudinal axis of the assembled plug member extending substantially normally of the glass panel.

25 Usually the glass panel and corresponding aperture will be of rectangular shape, the aperture being defined by four fixed lengths of framework. In that case it is preferable to provide four locking strips, 30 one for each edge of the glass rectangle. However, for a substantially vertical glass panel a different arrangement may be provided to locate the lower, horizontal edge of the glass panel, such as a simple channel-section framework member, to enable the lower 35 edge of the glass to be positioned prior to securing

the other three edges in position with three locking strips and associated plug members.

5 The plug/wedge members are preferably resiliently compressible in a transverse direction such that they are resiliently compressed in use between the base of the associated locking strip and the plug-retaining face of the respective framework length.

10 In one preferred embodiment the plug member is hollow to increase its transverse resilience.

15 The second limb of the locking strips is preferably longer than the first limb. This can assist in retaining the glass when the glass is subjected in use of the cabinet to pressure applied from the outside of the glass.

20 Preferably the longer second limb carries at its free end an integral protrusion which is directed towards the glass, and which engages in use with the associated glass-engaging member. In the event that the glass is urged inwardly of the cabinet in use, the glass or associated glass-engaging panel, press more firmly on the protrusion tending to tilt the locking strip substantially about the root of the lip on the associated framework length, with the result that the plug will tend to be compressed more in its transverse direction. Thus an increased force of a resilient nature will be developed to resist and absorb the inward force applied to the glass.

35 The locking strips preferably each comprise in transverse cross-section an extension to the base which is directed substantially normally of the plane of the glass panel, and inwardly of the cabinet, and each plug

is preferably provided with a head which is adapted to engage in use with the free end of the locking strip extension.

5 Preferably the locking strip extension at its free end is formed with an enlargement, and each plug is shaped to snap over the enlargement when the plug has been pushed fully home.

10 The framework lengths and locking strips are conveniently formed as extrusions, conveniently of suitable metal.

15 The plugs may also be cut from an extruded lengths of a suitable material, such as polypropylene.

20 A construction of fruit machine cabinet in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings in which:-

Figure 1 is a transverse exploded cross-sectional view of the elements associated with the clamping of the margin of a glass panel;

25 Figures 2 and 3 are similar transverse cross-sectional views showing successive stages in the procedure for securing the glass panel to the framework;

30 Figure 4 is a similar transverse cross-sectional view, on the line 4-4 of Figure 5, showing the fully assembled clamping elements;

35 Figure 5 is a perspective view of the assembled framework and glass panels for the fruit machine

cabinet looking from the outside of the cabinet;
and

5 Figure 6 is a transverse cross-section of the
common framework member positioned between the two
glass panels.

10 With reference to Figures 1 and 4 the margin of a
rectangular glass panel is referenced 1 and the
marginal flange of a light-box/light panel unit is
referenced 2, the light-box flange 2 being clamped
against the inside surface of the glass 1 in the
assembled cabinet. The inner surface 3 of the glass 1
carries silk-screened ornamentation/game information,
15 as usual.

20 The machine cabinet is constructed from lengths of
extruded metal alloy, which are shaped to provide
channel-section recesses in which rigid panels of the
machine, such as the side and back panels, are
retained. In Figure 1 the sectional length of
framework 4 is, in fact, one of the substantially
vertical lengths which bounds the vertical side edges
of the upright glass panel of a fruit machine, so that
25 Figure 1 represents a substantially horizontal
cross-section. However, the upper, horizontal
framework length extending along the top of that glass
panel is of identical section, for the same purpose,
and the opposed upright is of identical section. The
30 horizontal framework length 4' (Figure 5) extending
along the bottom of the upright panel can be of a
different section, such as in Figure 6, in order to
provide a channel C₁ in which the upright glass panel
can be supported during securing of the glass 1 to the
35 other three framework lengths. That lower framework
length can also be shaped to provide a further

channel C_2 to retain the rear margin of the lower glass panel of the machine, that sloping or substantially horizontal panel positioned about the mid-height of a fruit machine cabinet.

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The framework length 4 has flanges 5 and 6 defining a channel 7 to receive the margin of a side panel of the cabinet, such as a chip-board panel. A lip 8 is directed away from the aperture in the cabinet bounded by framework edge 9 and provides a flat abutment face 10 for engagement by the outer surface of the margin of the glass 1, and also provides a clamping face 11 for a locking strip 12 of channel-section.

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Locking strip 12 is a metal alloy extrusion and comprises a base 13 and upstanding, spaced flanges 14 and 15, the flange 14 extending at right angles to the base whereas the flange 15 is directed at an obtuse angle to base 13, is longer than flange 14 and carries at its free end a protrusion 16 directed generally parallel to the base 13 and towards the flange 14. A further flange 17, for a purpose to be described, is an extension of the base 13 in the direction away from flanges 14 and 15.

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A plurality of discrete resilient plugs 18 are provided for securing the locking strip length 4 in position, each plug comprising an elongate wedge portion 19, an intermediate parallel sided portion 20 and an enlarged head 21 provided with a recess 22 to receive and abut with the free end 23 of extension flange 17 to determine the fully inserted position of the plug, as shown in Figure 4. The end 23 is enlarged and the recess 22 is correspondingly shaped to provide a snap-engagement between the plug and end 23, to help

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resist any tendency of the plug to work free in use of the cabinet.

The glass 1 and light-box flange 2 are secured in place by the assembly sequence shown in Figures 2 to 4. In Figure 2, the glass 1 and flange 2 are positioned against lip 11 and the flange 14 of the locking strip 12 is positioned behind lip 8, which is of substantially the same length such that the free end of flange 14 is pivotable in the angle 24 defined between lip 8 and the adjacent part 25 of the framework section.

The plugs 18 are then urged between the extension 17 and a plug support flange 26 which is provided in a position spaced from the free edge of glass 1 such that it provides a plug-retaining face 27 which opposes, but is spaced from, the base 13 of the locking strip 12. The gradual insertion of the plugs 18 bring about a pivoting of the locking strip about the engagement between flange 14 and angle 24, anti-clockwise in the drawings, to press protrusion 16 progressively more firmly against the flange 2, such that in the fully assembled condition of the locking strip and plugs 18, shown in Figure 4, the protrusion 16 presses tightly against the flange 2, to hold the glass 1 and flange 2 firmly between flange 15 and the lip 8. There is also a clamping force developed at the junction between flange 15 and base 13.

Plugs 18 are formed with a longitudinal through-cavity 28 to increase the resilient nature of the plug in the transverse direction, in which direction the portions 19 and 20 of the plugs are resiliently compressed in the assembled condition, as shown in Figure 4.

The plug illustrated is conveniently cut from an extruded section of a suitably resilient material, but they may be individually moulded in a suitable material such as polypropylene.

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The use of a resilient plug, rather than a relatively rigid wedge member, provides a relatively uniform pressure on the base 13 of the locking strip 12 and thus on the edge of the glass 1 and light box flange 2.

In the event that in use pressure is applied to the glass 1 from the outside of the cabinet, in the direction from left to right in Figure 4, any slight inward movement of the glass 1 will bear against protrusion 16 tending to rotate the locking strip 12 clockwise about the free end of flange 14, and such movement of the locking strip will tend to compress the plugs 18 more firmly, and will therefore tend to increase the retaining force exerted by the plugs 18 on the locking strip 12.

In order to change the glass 1 and light box 2 it is a simple matter to withdraw the plugs 18 and then to remove the locking strips 12 to release the glass.

The length of framework are connected together at their ends by suitable die castings.

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CLAIMS

1. A kit of parts to produce a glazed cabinet,
5 comprising a cabinet framework bounding an aperture, a
glass panel adapted to bear against the inside of the
framework to extend across the aperture, at least one
removable retaining strip shaped to retain the margin
10 of the glass panel to the framework, and at least one
resilient plug or wedge member adapted to be inserted
between a plug-retaining face on the framework and the
retaining strip to hold the retaining strip in position.
2. A kit of parts as claimed in claim 1 comprising a
15 plurality of such plug or wedge members which can be
spaced apart along the retaining strip.
3. A kit of parts to produce a glazed cabinet
20 comprising a cabinet framework and a glass panel, the
cabinet framework bounding a polygonal aperture in
which the glass panel is to be retained, at least two
fixed lengths of the framework constituting sides of
the aperture and each presenting in transverse
25 cross-section a lip which is directed outwardly of the
aperture and which provides a glass abutment surface
for engagement by the outer surface of the margin of
the glass panel, which is of greater overall dimensions
than those of the aperture, and a respective locking
30 strip of substantially channel-section adapted to
extend along the respective side, the channel-section
strip comprising a base from which depend first and
second spaced upstanding limbs, the first limb of each
locking strip being adapted to engage in use with the
35 side of the lip which is remote from the glass panel,
and the second limb of the locking strip being adapted
to engage in use with the marginal flange of a light

panel/box or other associated glass-engaging member adapted to be located against the rear surface of the glass panel (or against the rear face of the glass panel itself in some cases), the said lengths of framework being shaped in transverse cross-section to define a plug-retaining face which in use substantially confronts but is spaced from the respective edge of the glass panel and any such associated member, and a plurality of plug or wedge members for retaining each locking strip, the plug members being adapted to be inserted into position from the inside of the cabinet, when the respective locking strip has been loosely assembled to the lip and glass panel, such that the plug members are wedged between the base of the respective locking strip and the plug-retaining face of the respective framework length, to retain the locking strip in a fully assembled position, the longitudinal axis of the assembled plug member then extending substantially normally of the glass panel.

4. A kit of parts as claimed in claim 3 in which the glass panel and corresponding aperture are of rectangular shape, the aperture being defined by four fixed lengths of framework, four locking strips being provided, one for each edge of the glass rectangle.

5. A kit of parts as claimed in claim 3 or claim 4 in which the plug/wedge members are resiliently compressible in a transverse direction such that they are resiliently compressed in use between the base of the associated locking strip and the plug-retaining face of the respective framework length.

6. A kit of parts as claimed in claim 5 in which each plug member is hollow to increase its transverse resilience.

7. A kit of parts as claimed in any one of claims 3 to 6 in which the second limb of the locking strip is longer than the first limb.
- 5 8. A kit of parts as claimed in claim 7 in which the longer second limb carries at its free end an integral protrusion which is directed towards the glass, and which engages in use with the associated glass-engaging member.
- 10 9. A kit of parts as claimed in any one of claims 3 to 8 in which the locking strips each comprise in transverse cross-section an extension to the base which is adapted to be directed in use substantially normally of the plane of the glass panel, and inwardly of the cabinet, and each plug is provided with a head which is adapted to engage in use with the free end of the locking strip extension.
- 15 20 10. A kit of parts as claimed in claim 9 in which the locking strip extension at its free end is formed with an enlargement, and each plug is shaped to snap over the enlargement when the plug has been pushed fully home.
- 25 11. A kit of parts to produce a glazed cabinet, as claimed in claim 1 and substantially as described with a reference to Figures 1 to 4 of the accompanying drawings.
- 30 12. A kit of parts to produce a glazed cabinet, as claimed in claim 3 and substantially as described with reference to Figures 1 to 4 of the accompanying drawings.

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13. A kit of parts as claimed in claim 11 or claim 12 and modified substantially as described with reference to Figures 5 and 6 of the accompanying drawings.

5 14. A glazed cabinet constructed from a kit of parts as claimed in any of the preceding claims.

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